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| 10/583,966 | 04/20/2007 | Katsuichi Yagisawa | 0649-L323PUS1 | 1502 |
| 2252 | 7590 | 02/11/2011 | | |
| BIRCH STEWART KOLASCH & BIRCH | | | EXAMINER | |
| PO BOX 747 | | | DUNWOODY, AARON M | |
| FALLS CHURCH, VA 22040-0747 | | | ART UNIT | PAPER NUMBER |
| | | | 3679 | |
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| NOTIFICATION DATE | DELIVERY MODE | | | |
| 02/11/2011 | ELECTRONIC | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

| | | |
|------------------------------|-----------------------------------|---------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/583,966 | YAGISAWA ET AL. |
| | Examiner AARON DUNWOODY | Art Unit 3679 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 10 December 2010.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1,2,4,5,7-10 and 12-23 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1,2,4,5,7-10 and 12-23 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date _____

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date _____

5) Notice of Informal Patent Application
 6) Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/17/2010 has been entered.

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "28T" and "28F" have both been used to designate the ring-shaped end face. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The incorporation of essential material in the specification by reference to an unpublished U.S. application, foreign application or patent, or to a publication is improper. Applicant is required to amend the disclosure to include the material incorporated by reference, if the material is relied upon to overcome any objection, rejection, or other requirement imposed by the Office. The amendment must be accompanied by a statement executed by the applicant, or a practitioner representing the applicant, stating that the material being inserted is the material previously incorporated by reference and that the amendment contains no new matter. 37 CFR 1.57(f).

Claim Objections

The claims are objected to because they include reference characters which are not enclosed within parentheses.

Reference characters corresponding to elements recited in the detailed description of the drawings and used in conjunction with the recitation of the same element or group of elements in the claims should be enclosed within parentheses so as to avoid confusion with other numbers or characters which may appear in the claims. See MPEP § 608.01(m).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 2, 4, 5, 7-10 and 12-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 8, and 17 recite the limitation "the ring-shaped end face"; and claim 17 recites the limitation "concave pipe-side engagement portion". There is insufficient antecedent basis for this limitation in the claims.

Claim 17 recites "the first and second arc-shaped recesses engaging the convex pipe-side engagement portion of the mating pipe"; however, it is not clear how arc-shaped recesses can engage both convex or concave pipe-side engagement portions.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4, 5, 7-10 and 12-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over 6540264, Yokoyama et al in view of US patent 6129393, Kodama et al and US patent 4772052, Morain.

In regards to claim 1, Yokoyama et al disclose a resin tube-equipped quick connector for connecting a fuel- transporting resin tube (13) to a mating pipe, comprising a connector body (11), a retainer (19) and a seal member (15, 17); wherein the connector body has a generally tubular shape as a whole, has a retainer holding portion adapted to receive and hold the retainer in an axial opening at one axial end

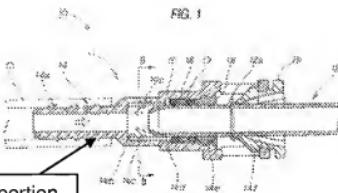
thereof, and also has at an opposite axial end thereof, a press-fitting portion which is press-fitted into the interior of the resin tube from one end thereof, wherein the press-fitting portion is provided with the following portions along an axial length thereof, one immediately after another: a first truncated-conical-shaped portion (14a) extending from the ring-shaped end face on a tip end of the press-fitting portion; a first cylindrical-shaped root portion, a first truncated-conical-shaped annular projection followed by a second cylindrical-shaped root portion, a second truncated-conical-shaped annular projection followed by a third cylindrical-shaped root portion, wherein the retainer holding portion includes first and second windows opening through opposite curved sides thereof, wherein the retainer includes a first arc-shaped portion which projects outwardly into the first window of the retainer holding portion, and a second arc-shaped portion which projects outwardly into the second window of the retainer holding portion, wherein the retainer includes a retainer-side retaining engagement portion having first and second arc-shaped openings which are adapted to engage with a convex pipe-side engagement portion, formed on an outer peripheral surface of the mating pipe and spaced from an axial insertion-side end thereof, so as to fix the inserted mating pipe in the axial direction; and when the mating pipe is fixed in an axial direction in the retainer, and the retainer is held in the connector body, the convex engagement portion of the mating pipe is visible when viewed through each of the first and second windows of the retainer holding portion, wherein the seal member is mounted within the connector body at an inner region thereof disposed closer to the press-fitting portion than the retainer holding portion is disposed, and the seal member is brought into contact with an outer

peripheral surface of an insertion end portion of the inserted mating pipe disposed closer to a distal end of the mating pipe than the pipe-side engagement portion is disposed, thereby forming an air-tight seal between the insertion end portion and an inner surface of the connector body; and wherein the resin tube includes a press-fit undergoing portion into which the press- fitting portion is press-fitted.

Yokomaya et al do not disclose a C-shaped retainer.

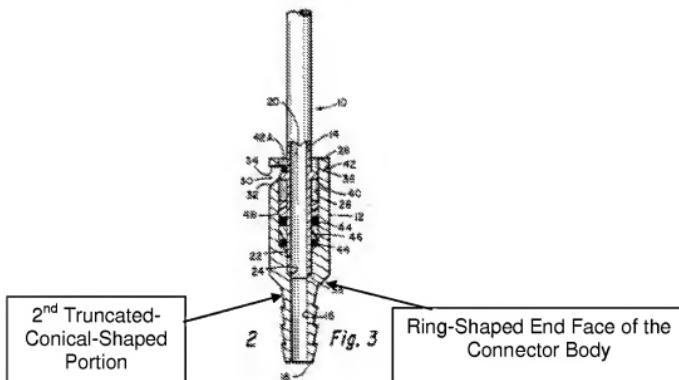
Kodama et al teach a C-shaped retainer can be deformed so that it can be reused repeatedly a number of times (abstract). As Kodama et al relate to a male member and a female member which are connected with each other to connect hoses or pipes for transferring a variety of fluids, it would have been obvious to one having ordinary skill in the art at the time the invention was made to fabricate a C-shaped retainer to be deformed so that it can be reused repeatedly a number of times, as taught by Kodama et al.

Yokomaya et al do not disclose a second truncated-conical-shaped portion, which ends abutting with a ring-shaped end face of the connector body; however, Yokomaya et al do disclose a second truncated-conical-shaped portion in Figure 1 below.



It would have been obvious to one having ordinary skill in the art at the time the invention was made to fabricate the second truncated-conical-shaped portion, which ends abutting with a ring-shaped end face of the connector body, since a change in the shape of a prior art device is a design consideration within the level of skill of one skilled in the art. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

Further, in Figure 3 below, Morain teaches a second truncated-conical-shaped portion, which ends abutting with the ring-shaped end face of the connector body. As Morain relates to an improved highly effective coupling which can be very expeditiously employed to connect one tubular member to another tubular member, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a second truncated-conical-shaped portion, which ends abutting with the ring-shaped end face of the connector body, since a change in the shape of a prior art device is a design consideration within the level of skill of one skilled in the art. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).



In regards to claim 2, Yokoyama et al in view of Kodama et al and Morain disclose the retainer is elastically deformable radially, the retainer-side retaining engagement portion is capable of being fitted to a body-side retaining engagement portion, formed at the retainer holding portion of the connector body, from a radially-inward side to be retained and fixed in the axial direction, the retainer also including: at least one of an inner peripheral cam surface for elastically expanding the retainer when inserting the mating pipe into the retainer and an outer peripheral cam surface for elastically reducing the diameter of the retainer when inserting the retainer into the retainer holding portion.

In regards to claim 4, Yokoyama et al in view of Kodama et al and Morain disclose a protector is fitted on the resin tube to cover an outer peripheral surface of the resin tube.

In regards to claim 5, Yokoyama et al in view of Kodama et al and Morain disclose the resin tube has a multi-layer structure an inner layer of the resin tube is more excellent in gasoline resistance than an outer layer.

In regards to claim 7, Yokoyama et al in view of Kodama et al and Morain disclose the resin tube includes an inner diameter of not larger than 5 mm.

In regards to claim 8, Yokoyama et al in view of Kodama et al and Morain disclose a resin tube-equipped quick connector for connecting a fuel- transporting resin tube to a mating pipe, comprising: a connector body, a C-shaped retainer and a seal member; wherein the connector body has a generally tubular shape as a whole, and has a retainer holding portion adapted to receive and hold the C-shaped retainer in an axial opening at one axial end thereof, and also has at an other axial end thereof, a press-fitting portion which is press-fitted into the interior of the resin tube from one end thereof; wherein the press-fitting portion is provided with the following portions along an axial length thereof, one immediately after another: a first truncated-conical-shaped portion extending from the ring-shaped end face on a tip end of the press-fitting portion; a first cylindrical-shaped root portion, a first truncated-conical-shaped annular projection followed by a second cylindrical-shaped root portion, a second truncated-conical-shaped annular projection followed by a third cylindrical-shaped root portion, a second truncated-conical-shaped portion, which ends abutting with a ring- shaped end

face of the connector body, wherein the retainer holding portion includes first and second box-shaped windows opening through opposite curved sides thereof; wherein the C-shaped retainer includes a first arc-shaped portion which projects outwardly into the first box-shaped window of the retainer holding portion, and a second arc-shaped portion which projects outwardly into the second box shaped window of the retainer holding portion, wherein the C-shaped retainer includes a retainer-side retaining engagement portion having first and second arc-shaped openings which are adapted to engage with a convex pipe-side engagement portion, formed on an outer peripheral surface of the mating pipe and spaced from an axial insertion-side end thereof, so as to fix the inserted mating pipe in the axial direction; and when the mating pipe is fixed in an axial direction in the C-shaped retainer, and the C-shaped retainer is held in the connector body, the convex engagement portion of the mating pipe is visible when viewed through each of the first and second windows of the retainer holding portion, the seal member is mounted within the connector body at an inner region thereof disposed closer to the press-fitting portion than the retainer holding portion is disposed, and the seal member is brought into contact with an outer peripheral surface of an insertion end portion of the inserted mating pipe disposed closer to a distal end of the mating pipe than the pipe-side engagement portion is disposed, thereby forming an air-tight seal between the insertion end portion and an inner surface of the connector body; and a press-fit undergoing portion of the resin tube, into which the press-fitting portion is to be press-fitted, has an inner diameter that is expanded prior to press-fitting, and the press-

fit undergoing portion is press-fitted in the tube diameter-expanded press-fit undergoing portion to be integrated therewith in a withdrawal-preventing condition.

In regards to claim 9, Yokoyama et al in view of Kodama et al and Morain disclose the first truncated-conical-shaped annular projection is closer to a distal end of the press-fitting portion than the second truncated-conical-shaped annular projection.

In regards to claim 10, Yokoyama et al in view of Kodama et al and Morain disclose the first truncated-conical-shaped annular projection is closer to a distal end of the press-fitting portion than the second truncated-conical-shaped annular projection.

In regards to claim 12, Yokoyama et al in view of Kodama et al and Morain disclose no portion of the press-fitting portion has an outer diameter larger than an outer diameter of each of the truncated-conical-shaped shaped annular projections.

In regards to claim 13, Yokoyama et al in view of Kodama et al and Morain disclose no portion of the press-fitting portion has an outer diameter larger than an outer diameter of each of the truncated-conical-shaped shaped annular projections.

In regards to claim 14, Yokoyama et al in view of Kodama et al and Morain disclose the press-fitting portion is provided along the axial length with a first ring-shaped face between the first truncated-conical-shaped portion and the second cylindrical-shaped root, and a second ring-shaped face between the second truncated conical-shaped portion and the third cylindrical-shaped root.

In regards to claim 15, Yokoyama et al in view of Kodama et al and Morain disclose the press-fitting portion is provided along the axial length with the a first ring-shaped face between the first truncated-conical-shaped portion and the second

cylindrical-shaped root, and a second ring-shaped face between the second truncated conical-shaped portion and the third cylindrical-shaped root.

In regards to claim 16, Yokoyama et al in view of Kodama et al and Morain disclose a bushing mounted within the connector body at a region deeper than the retainer holding portion.

In regards to claim 17, Yokoyama et al in view of Kodama et al and Morain disclose a coupling structure of a quick connector and a resin tube for connecting a fuel-transporting resin tube to a mating pipe, comprising: a connector body, a retainer, and a seal member; wherein the connector body has a generally tubular shape as a whole, and has a retainer holding portion at one axial side thereof, and also has at the other side thereof a press-fitting portion which is press-fitted into the interior of the resin tube from one end thereof, wherein the press-fitting portion is provided with the following portions along an axial length thereof, one immediately after another: a first truncated-conical-shaped portion extending from the ring-shaped end face on a tip end of the press-fitting portion; a first cylindrical-shaped root portion, a first truncated-conical-shaped annular projection followed by a second cylindrical-shaped root portion, a second truncated-conical-shaped annular projection followed by a third cylindrical-shaped root portion, a second truncated-conical-shaped portion, which ends abutting with a ring-shaped end face of the connector body, wherein the retainer holding portion includes first and second windows opening through opposite curved sides thereof, wherein the retainer is a member adapted to be held in the retainer holding portion, and includes: a first arc-shaped portion which projects outwardly into the first window of the

retainer holding portion, and a second arc-shaped portion which projects outwardly into the second window of the retainer holding portion, and a retainer-side retaining engagement portion having first and second arc-shaped recesses which are adapted to engage with a convex pipe-side engagement portion, formed on an outer peripheral surface of the mating pipe and spaced from an axial insertion-side end thereof, so as to fix the inserted mating pipe in the axial direction; and when the mating pipe is fixed in an axial direction in the retainer, and the retainer is held in the connector body, the first and second arc-shaped recesses engaging the convex or concave pipe-side engagement portion of the mating pipe are located under each of the first and second windows of the retainer holding portion, wherein the seal member is mounted within the connector body at an inner region thereof disposed closer to the press-fitting portion than the retainer holding portion is disposed, and the seal member is brought into contact with an outer peripheral surface of an insertion end portion of the inserted mating pipe disposed closer to a distal end of the mating pipe than the pipe-side engagement portion is disposed, thereby forming an air-tight seal between the insertion end portion and an inner surface of the connector body; and wherein the resin tube is a small-diameter tube having an inner diameter of not larger than 5 mm, wherein the resin tube includes a press-fit undergoing portion into which the press-fitting portion is press-fitted.

In regards to claim 18, Yokoyama et al in view of Kodama et al and Morain disclose the retainer is elastically deformable radially, and the retainer-side retaining engagement portion is capable of being fitted to a body-side retaining engagement portion, formed at the retainer holding portion of the connector body, from a radially-

inward side to be retained and fixed in the axial direction, the retainer also including: at least one of an inner peripheral cam surface for elastically expanding the retainer when inserting the mating pipe into the retainer and an outer peripheral cam surface for elastically reducing the diameter of the retainer when inserting the retainer into the retainer holding portion.

In regards to claim 19, Yokoyama et al in view of Kodama et al and Morain disclose a protector fitted on the resin tube to cover an outer peripheral surface of the resin tube.

In regards to claim 20, Yokoyama et al in view of Kodama et al and Morain disclose the resin tube has a multi-layer structure, having at least an inner layer and an outer layer, the inner layer being more resistant to gasoline than is the outer layer.

In regards to claim 21, Yokoyama et al in view of Kodama et al and Morain disclose the resin tube comprises a polyamide resin.

In regards to claim 22, Yokoyama et al in view of Kodama et al and Morain disclose an outer diameter d_6 of a root portion provided between the first and second truncated-conical-shaped annular projections and an inner diameter of the tube diameter-expanded press-fit undergoing portion are substantially the same, and wherein an the axial length L of the press-fitting portion and an axial length of the press-fitting undergoing portion are substantially the same.

In regards to claim 23, Yokoyama et al in view of Kodama et al and Morain disclose before the press-fitting portion is press-fitted into the press-fit undergoing portion, the press-fit undergoing portion is formed with an inner diameter that is

substantially equal to an outer diameter of the root portions of the press-fitting portion, and after the press-fitting portion is press-fitted into the press-fit undergoing portion of the resin tube, the press-fit undergoing portion is adapted to cause portions of its inner diameter facing the root portions to become equal to the outer diameter of the root portions, so that the press-fit undergoing portion is integrated with the press-fitting portion in a withdrawal-preventing condition.

Response to Arguments

Applicant's arguments with respect to claims above have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AARON DUNWOODY whose telephone number is (571)272-7080. The examiner can normally be reached on 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on (571)272-7087. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/AARON DUNWOODY/
Primary Examiner, Art Unit 3679

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